CHOICES WHICH CHANGE LIFE SATISFACTION: EVIDENCE FROM GERMANY, BRITAIN & AUSTRALIA*

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Abstract

Evidence from panel surveys in Australia, Britain and Germany shows that individual choices relating to life priorities/values, partner's personality, hours of work, social participation and healthy lifestyle have substantial effects on life satisfaction. The results have negative implications for a widely accepted theory of happiness, *set-point theory.* This theory holds that adult happiness is stable in the medium and long term, although temporary fluctuations occur due to life events. Set-point theory has come under increasing criticism in recent years, primarily due to unmistakable evidence in the German Socio-Economic Panel (SOEP) that, during the last 25 years, over a third of the population has recorded substantial and apparently permanent changes in life satisfaction (Fujita and Diener, 2005; Headey, 2008a; Headey, Muffels and Wagner, 2010). It is becoming clear that the main challenge now for happiness researchers is to develop new explanations which can account for medium and long term change, and not merely stability in happiness. Set-point theory is limited precisely because it is purely a theory of stability.

Since its earliest days in the 1970s empirical research on happiness (life satisfaction, subjective well-being), has been dominated by one scientific paradigm (Kuhn, 1962). That paradigm was initially labeled *adaptation theory*, then underwent numerous confusing name changes, and in its final incarnation is usually known as *set-point theory*. The theme of the first part of this paper is that the paradigm certainly needs substantial revision and may need replacing. Evidence from the German Socio-Economic Panel (SOEP) shows that, contrary to set-point theory, substantial minorities record long term changes in their levels of life satisfaction. In the second part of the paper, using data from SOEP and also from Australian (HILDA) and British (BHPS) panels, we adduce evidence about individual preferences and choices which can produce *change* in life satisfaction. These choices relate to (1) life goals/values (2) the personality of the partner one lives with (3) hours of work and leisure (4) social participation and (5) healthy lifestyle.

The central claim of set-point theory is that adult individuals have stable levels of happiness. Of course they do not all have the same levels; some people are persistently happier than others. According to the theory, stable differences are *set* by personality traits (especially neuroticism and extroversion) and other factors which are hereditary or determined early in life. It is recognized that major life events (e.g. getting married, or being widowed) can cause fluctuations around the set-point, but the effects of events are supposed to be temporary. Individuals normally (so the theory holds) return to their previous set-point within a year or two. In the mid-1990s Lykken and Tellegen (1996) coined the term and appeared to crown set-point theory by using the Minnesota twin data to show that hereditary effects more generally, and not just the specific traits of neuroticism and extroversion, are strongly linked to happiness. A famous quote summarizing their work is that, "Trying to be happier may be as futile as trying to be taller". They clearly claimed – and many researchers accepted their conclusion – that neither individual choices, nor public policy choices, could do much to change or enhance happiness.

It is strange but true that until recently set-point theory had never been *directly* tested. Evidence for the theory, including twin studies, was always indirect, inferential. The only way to test the theory directly is to interview the same people for decades and see if their levels of happiness really are stable.

The German Socio-Economic Panel (SOEP) has now run for nearly thirty years and is the first available dataset world-wide with which we can directly test set-point theory. The sub-sample used in this paper comprises prime age adults (25-64); precisely the group whose life satisfaction is supposed to be stable.

INSERT TABLE 1 HERE

Over a third of the panel have registered changes of 25 percentiles or more in the life satisfaction distribution (e.g. from the 50th percentile to the 25th), about a quarter changed by 33.3 or more percentiles, and about 12% changed by 50 percentiles or more (e.g. from the 25th to the 75th percentile, or vice-versa). So the SOEP data make it clear that substantial minorities (although not majorities) record long term change in life satisfaction. Comparable changes, although for shorter periods, are found in the Australian and British panel data. A major challenge for researchers now is to try and account for change. The weakness of set-point theory is that it is purely a theory of stability. The focus of the rest of this paper is on individual preferences and choices – relatively unconstrained choices - which make a substantial difference to life satisfaction.

METHODS

The German (SOEP), British (BHPS) and Australian (HILDA) Socio-Economic Panels

The German (SOEP) panel is the longest running of these national household panels. It began in 1984 in West Germany with a sample of 12,541 respondents (Wagner, Frick and Schupp, 2007). Interviews have been conducted annually ever since. Everyone in the household aged 16 and over is interviewed. The cross-sectional representativeness of the panel is maintained by interviewing children, and also 'split-offs' and their new families. So when a young person leaves home ('splits off') to marry and set up a new family, the entire new family becomes part of the panel. The sample was extended to East Germany in 1990, shortly after the Berlin Wall came down, and since then has been boosted by the addition of new immigrant samples, a

special sample of the rich, and recruitment of new respondents partly to increase numbers in 'policy groups'. There are now over 60,000 respondents on file, including some grandchildren as well as children of the original respondents. The main topics covered in the annual questionnaire are family, income and labour force dynamics. A question on life satisfaction has been included every year.

The British (BHPS) panel was launched in 1991 with about 10,300 individuals in 5,500 households (Lynn, 2006). However, a question about life satisfaction was not included until 1996, so in this paper only 1996-2007 data are used. As in Germany, all individuals in the household who are aged 16 and over are interviewed. Again, sample representativeness is maintained by including split-offs and their new households. The British panel was augmented by booster samples for Scotland and Wales in 1991 and a new Northern Ireland sample in 2001. In 2007, the latest year used in this paper, the sample size was just over 14,000. A major change occurred in 2010 when the BHPS panel was merged into the new United Kingdom Household Longitudinal Study ('Understanding Society'), which included a great many additional questions, especially in the health area.

The Australian (HILDA) panel began in 2001 with a sample of 13,969 individuals in about 7,700 households (Watson and Wooden, 2004). Interviews were achieved in 61% of in-scope households. In the Australian panel all household members aged 15 and over are interviewed. Using following rules similar to the Germans and British, individuals who split off from their original households continue in the panel, and members of their new households join it. It may be noted that, as happens in all panels with good retention rates, the sample size is now increasing. That is, the number of individuals added to the panel each year, via split-offs and young people turning 15, exceeds the number who die, cannot be traced, or drop out by refusing an interview.

Measures
The research teams which run the three panels have developed slightly differing measures for most concepts used in this paper. However, despite differences of language, question wording and response scales, we shall find that our main empirical

results (with a single exception relating to life goals) replicate across the three countries.

Life satisfaction

The dependent (outcome) variable in all equations is *life satisfaction* measured in Australia and Germany on a 0-10 ('totally dissatisfied' to 'totally satisfied') scale. In Britain a 1-7 scale is used; this has been transformed to run from 0-10 to make the British results more readily comparable with the other two countries.

Single item measures of life satisfaction are plainly not as reliable or valid as multi-item measures, but are widely used in international surveys and have been reviewed as acceptably valid (Diener et al, 1999).

Personality traits

In 2005 the research teams running the three panels more or less copied each other and included a full set of personality measures for the first time. The chosen instrument in each country was a short version of the Big Five Personality Domains – NEO-AC (Costa and McCrae, 1991). The traits in the Big Five are neuroticism, extroversion, openness, agreeableness and conscientiousness. The British and German panels included very short versions of the five scales – just three items/questions to measure each trait - which are reported to be satisfactorily valid and to correlate highly with longer versions of the NEO-AC preferred by psychologists (Gerlitz and Schupp, 2005; Lange et al, 2011).[2] The Australian panel included seven items per trait (Saucier, 1994).

Psychologists usually take the view that personality is about 40-50% hereditary and quite stable, at least from the age of about 25 or 30 onwards (Roberts, Walton and Viechtbauer, 2006). It should be stressed that, by including personality traits measured in 2005 on the right hand side of equations to account for life satisfaction in earlier as well as later years, we are in effect assuming that personality is completely stable. If it were completely stable, then of course it would not matter when it was

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[2] Even the short version of the scale released by Psychological Assessment Resources has 60 items; 12 items per trait (Costa and McCrae, 1991).

measured. However, the assumption is not entirely correct. It is thought that ratings on personality traits might be changed to a moderate degree by life experiences like having a stable marriage or an absorbing job (Roberts, Walton and Viechtbauer, 2006; Scollon and Diener, 2006; Specht, Egloff and Schmukle, 2011; Specht, Egloff and Schmukle, in press).

Life goals/values

Happiness researchers are understandably keen to measure what are variously termed *life goals* or *life priorities* or *values*. However, it has proved difficult to obtain valid measures. In a very thorough investigation, two pioneers of happiness research, Andrews and Withey (1976) reported that measures of the priority attached to goals, asked on scales running from 'very important' to 'not at all important', appeared to suffer from social desirability bias, with respondents all giving high ratings to family goals. Importance scores also had low test-retest reliability. A further possible problem was that importance scores and satisfaction scores in most life domains turned out to be moderately correlated. This might mean that people were quite good at getting what they wanted in life – a result in line with economists' utility maximization assumption – or might suggest some reverse causation, with respondents tending to impute importance to domains they were already well satisfied with, perhaps as a psychological mechanism to boost their overall life satisfaction (Andrews and Withey, 1976). In general, respondents whose life satisfaction was high tended to rate most domains as very important, whereas unhappy or depressed respondents tended (presumably as a consequence of unhappiness) to rate most domains as relatively unimportant. An underlying problem, which may partly account for measurement difficulties, is probably that most people are not of a philosophical bent and do not regularly think about their life priorities.

The German panel group decided to tackle these issues afresh and appears to have made considerable improvements in goals/values measurement. Their approach is based on a classification of goals/values initially developed by Kluckhohn and Strodtbeck (1961). Kluckhohn and Strodtbeck set out to measure three sets of goals/values:
- material and financial goals/values and career success

- family goals/values: marriage, children and the home
- pro-social or altruistic goals/values: friendship, helping others, social and political activism.

Using this framework, the German research group developed survey items which have a stable factor structure and adequate test-retest reliability (Wagner, Frick and Schupp, 2007). Goals have been measured intermittently (rather than annually) in SOEP, starting in 1990. The specific questions asked in different waves of the survey have varied somewhat; here we use data from the 1990, 1992, 1995, 2004 and 2008 surveys in which the questions were nearly identical. In these surveys 9 or 10 items were included[3], all asked on a 1-4 scale running scale running from 'very important' to 'not at all important'. In each wave the items formed three distinct, replicating factors: a *material and financial goals/values* factor, a *family goals/values* factor and a *pro-social or altruistic goals/values* factor (Headey, 2008b). Material/financial goals may be viewed as zero sum, whereas family goals and pro-social goals are non-zero sum.

The *material/financial goals* index which gave equal weight to 'being able to buy things', and 'success in your job'. Similarly a *family goals* index was constructed which gave equal weight to items relating to the importance of marriage and children items. Finally, the *pro-social/altruistic goals* index gave equal weight to 'being involved in social and political activities' and 'helping other people'.

The Australian panel has included questions on life goals only once (2001), and the British panel only twice (1998, 2003). Rather than follow the German panel approach of measuring goals according to an a priori classification, these two research teams have reverted to the earlier approach of presenting respondents with a rather miscellaneous set of goals. Since the purpose of this article is to assess whether determinants of life satisfaction replicate cross-nationally, the analysis will include only goals similar to those classified by the German research group. In the British panel questions were asked on a 1-10 scale ('not at all important' to 'very important').

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[3] Ten items were included in 1990, 1992 and 1995 and then nine in 2004 and 2008. The item dropped in 2004 and 2008 related to the importance of having a wide circle of friends, which loaded on the pro-social factor.

Respondents rated the importance to them of 'money' (finanical goal/value), 'a good partnership' and 'having children' (family goals/values) and 'good friends' (friendship goal, but without a community participation aspect). In the Australian HILDA survey questions were included about the various goals on a 0-10 scale ('not at all important' to 'very important'). Key items related to the importance of 'your family' (family goals) and 'involvement in your local community' (community goal but without a friendship aspect). The question intended to tap into material/financial goals was somewhat ambiguous. Respondents rated the importance of 'your financial situation'. This item could have assessed the extent to which respondents were concerned or worried about their financial situation, rather than, or as well as, the priority they attached to material goals.

We have not attempted to assess the effects of changes in life goals/values in this paper. Because the questions have only been asked once in Australia, twice in Britain and intermittently in Germany, the data are not really suited to analysis of change. Instead we have averaged respondents' scores on goals for the waves in which they participated.

Preferred and actual working hours: work-leisure balance
The trade-off between paid work (or rather the consumption that work pays for) and leisure is central to welfare economics. Respondents in the Australian and German panels are asked both how many hours per week they actually work (in all jobs combined, if they have more than one job), and how many they would prefer to work. The gap between these two figures can be treated as a rough measure of the degree to which they are achieving their preferred trade-off/choice between work and leisure. Here we classify individuals whose actual working time is within three hours of their preferred time as having their preferences met. We treat those who work over three hours more than they want as 'overworked', and those who work over three hours less than they want as 'underworked'. Other hours 'gaps' were tested, but the 3-hour variables showed the highest correlation with life satisfaction.

In the British panel respondents are asked how many hours they work (in all jobs combined), and whether they would prefer to work more hours than they do now, fewer, or the same. They are not asked precisely how many hours they would prefer

to work, so designating them as 'overworked', 'underworked' or having their preferences met is a somewhat cruder exercise than in the Australian and German files.

Social participation

The three panel surveys also differed somewhat in how they measure participation in social activities. In the Australian panel respondents are asked a single question about how frequently they meet with 'friends and relatives'. The response scale runs from 1 (every day) to 7 (less than every 3 months).[4] In the British panel there are two separate items, one relating to frequency of 'meeting with friends and relatives' and one to frequency of 'talking with neighbors'. These are asked on a response scale running from 'on many days' (code 1) to 'never' (code 5). For present purposes these highly correlated items have been combined into a social participation index. In the German panel the social participation index combines two correlated items about frequency of 'meeting with friends, relatives or neighbours' and 'helping out friends, relatives or neighbours'.[5] The response scale has just three points: 'every week', 'every month' and 'seldom or never'.[6]

An advantage is that the social participation questions have been asked every year in all three panels.

Healthy lifestyle

In all three panels the only 'healthy lifestyle' questions which have been asked repeatedly (but not in the British survey annually) relate to participation in sport and/or exercise. Again, questions differ slightly. In the Australian panel respondents are asked about how frequently they take moderate or intensive physical activity lasting for at least 30 minutes. The response scale runs from 0 ('not at all') to 5 ('every day'). In the British panel time use questions receive more attention than in the other two panels. A question is asked every two years about how often respondents walk, swim or play sport. The 5-point response scale runs from 'at least once a week' to 'never/almost never'. Finally, in the German dataset there is an

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[4] For each country response scales relating to social participation have been reversed so that a high score reflects high participation.

[5] The correlations have varied from year to year but are usually around 0.3.

[6] 'Seldom' or 'never' have been included as separate categories in more recent waves of SOEP.

annual question about participation in active sport or exercise. The 1-4 response scale runs from 'almost never' to 'at least once a week'.

A second healthy lifestyle measure, Body-Mass Index (BMI), has only been included in the panels in recent years (and even then not every year). BMI measure the appropriateness of weight for height. A BMI between 18.5 and 24.9 is considered 'normal', under 18.5 is 'underweight', 25.0 to 29.9 is 'overweight' and 30+ is 'obese'.

Data analysis based on moving three or five-year averages of life satisfaction

Almost all longitudinal analyses of individual or household panel data are based on annual waves, reflecting the time interval at which data are actually collected. But it is already known that annual changes in life satisfaction are mainly just temporary fluctuations due to life events. In this paper our aim is to account for medium term stability and change, so it is appropriate to base analysis on medium term periods of life satisfaction. In practice, we use five-year moving averages of life satisfaction (1984-88, 1985-89, 1986-90 and so on) for analysing the German data, and three-year moving averages for the shorter Australian and British panels. The purpose of taking multi-year averages is to iron out temporary fluctuations. The procedure is similar to that used by economists, who commonly take multi-year periods of income, in order to assess changes in medium or long term ('permanent') income. Intuitively, five years periods seem appropriate when writing about medium term change. However, the Australian and British panel data are only available for shorter periods, so we settle for three-year moving averages.

In summary, the dependent (outcome) variables in all analyses in the paper are three or five-year moving averages in the life satisfaction scores of panel members. We then use respondents' annual scores for independent (explanatory) variables to try and account for medium term change.

It should also be noted that values for some explanatory variables which were not included in every wave of the panel surveys have been imputed. Oddly, the life satisfaction question was omitted from the British survey in 2001. We have simply averaged results for 2000 and 2002 to provide 2001 values. More importantly, the NEO-AC has been asked only once in each panel (in 2005), so we needed to assume that personality is stable and impute it for all other years. Not to have done so would have voided all longitudinal analyses.

In any panel survey, what are called 'panel conditioning effects' are a possible source of bias. That is, panel members might tend to change their answers over time – and answer differently from the way non-panel members would answer - as a consequence just of being panel members. In all three panels there is some evidence that panel

members, in their first few years of responding, tend to report higher life satisfaction than when they have been in the panel for a good many years (Frijters, Haisken-DeNew and Shields, 2004). This could be due to 'social desirability bias'; a desire to look good and appear to be a happy person, which is stronger in the first few years of responding than in later years. Or it could be due to a 'learning effect'; learning to use the middle points of the 0-10 or 1-7 scale, rather than the extremes and particularly the top end.

To compensate for these possible sources of bias, we include in all equations a variable which measures the number of years in which each panel member has already responded to survey questions.

RESULTS

The sequence of models and commentaries presented in this section reflects an assumed temporal and causal sequence. It is assumed that an individual's own personality traits are substantially hereditary and that they, along with other fixed characteristics like gender and ethnicity, should be *controlled* in subsequent models which include choices relating to life goals/priorities, partner characteristics and so forth. Later it is assumed that both personality traits and life goals/values should be regarded as causally antecedent to choices about working hours, social participation and 'healthy lifestyle'.

Effects of Own and Partner's Personality Traits on Life Satisfaction

For each country, Table 2 shows the effects of one's own and partner personality traits (NEO-AC) on life satisfaction. The main interest lies in the effect of partner traits, since it is already well known that one's own traits make a substantial difference. However, the first column of results for each country shows just the effects on satisfaction of an individual's own traits, plus a set of 'control' variables. In all subsequent analyses we will need to net out the effects of a person's own traits plus controls in order to assess the impact of personal and work choices on life satisfaction. The controls included in all models are: gender, age, age squared and age

cubed (to allow for a decline in satisfaction in middle age and a rise in senior years)[7], marital/partnership status, having a health disability, the national unemployment rate, being East German (Germany only), foreign born (Germany only), being from a non-English speaking background (Australia only), non-white (Britain only), and 'number of years already a panel respondent'. It was decided not to include level of formal education, occupational status or household income as controls because they could well be partly consequences rather than antecedents of personality traits and life goals. It should be noted, however, that if these extra controls are (mistakenly?) included, then all results remain substantially unchanged.

Table 2 for each country reports results for the whole sample and then separately for partnered men and partnered women. As noted above, the results of main interest (columns 2 and 3) relate to partnered people and show evidence of the effects of partner personality traits on life satisfaction, net of the effects of one's own traits. The tables report Generalized Least Squares (GLS) random effects regressions, which make use of all years of panel data, but should be viewed as yielding static rather than longitudinal results because personality traits (the explanatory variables of main interest) are assumed to be stable. This and all subsequent tables report metric (unstandardized) coefficients.

INSERT TABLE 2 FOR EACH COUNTRY HERE

It has long been known that the personality traits of neuroticism (N) and extroversion (E), especially N, are quite strongly related to life satisfaction (Costa and McCrae, 1980). Results from all three national panels indicate that traits agreeableness (A) and conscientiousness (C) are favourable for life satisfaction. The results relating to A and C have also been found in several population surveys (Lucas, 2008). In most surveys trait openness (O) is found to be unrelated to life satisfaction and this is the result that should probably be accepted (Lucas, 2008). The three panels, using short scales, actually produce contradictory findings in relation to O. The British panel shows no statistically significant link between O and life satisfaction, the German panel shows a

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[7] Many papers only include an age squared term. However, if it is hypothesized that satisfaction declines in middle age and then rises again in one's senior years, then logically an age cubed term is required as well.

small but statistically significant positive relationship, and the Australian panel finds a small and significant negative relationship.

The somewhat new and quite important results in these tables relate to partnered people. It is clear that partner's level of neuroticism has a negative and significant effect ($p<0.001$) on an individual's own life satisfaction, over and above his/her own traits. Other partner traits appear not to matter much, although in Australia and Britain partner conscientiousness (C) has a positive effect, which is just statistically significant. It is possible that this is due to conscientiousness being related to higher earnings (Barrick and Mount, 1991).

A hypothesis sometimes put forward is that partners who have similar personalities are likely to be suited to each other and may have higher life satisfaction as a consequence (Robins, Caspi and Moffitt, 2000).[8] This hypothesis was tested by constructing a partner similarity/difference score for each of the five traits. When these variables were added to the equations, none of them accounted for significant additional variance. In other words, the evidence indicates that the extent to which partner personality is favourable to life satisfaction matters, but personality similarity between partners offers no additional benefits. Robins, Caspi and Moffitt (2000) report a similar finding in relation to marital satisfaction.

Because adult personality is fairly stable, a key implication of these results is that partnering a person with traits positively correlated with life satisfaction will bring about a *long term improvement* in one's own satisfaction, whilst partnering a person with traits negatively correlated with satisfaction will bring about a *long term loss*. To test these inferences, separate equations were run for German partners who had lived together for less than 5 years, 5-10 years, 10-20 years, and over 20 years. It was hypothesized that gains and losses to life satisfaction might diminish the longer one remained with the same partner. This proved *not* to be the case. In all sub-groups partner personality, especially trait N, made a substantial difference to satisfaction.

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[8] An alternative hypothesis is that 'unlike poles attract' and that partners with contrasting personalities will get on better together and have higher life satisfaction. This hypothesis was also tested and rejected, using the partner similarity/difference scores constructed.

These results are contrary to some previous research which has found that 'getting married' usually produces only a one or two year gain in life satisfaction, after which people revert to their previous set-point (Clark, Diener and Lucas, 2008). The issue of reconciling previous evidence about the short term effects of 'getting married' with the evidence here is fairly straightforward and will be taken up in the Discussion section.

Effects of Life Goals/Values and Partner's Life Goals/Values on Life Satisfaction

Table 3 for each country gives results relating to the impact of one's own and partner's life goals/values on life satisfaction. Personality traits (and standard demographics) are treated as antecedent to life goals and so are included in the equations as controls. In Table 3 results are also based on Generalized Least Squares (GLS) random effects regression equations.

INSERT TABLE 3 FOR EACH COUNTRY HERE

The evidence indicates that people who prioritize non zero sum pro-social, altruistic goals or family goals are more satisfied with life than people who prioritize zero sum goals relating to material success and careers. It appears that pro-social goals can make a substantial contribution to satisfaction, whereas material goals are not helpful to life satisfaction and may actually be harmful (Nickerson et al, 2003; Diener and Seligman, 2004; Headey, 2008b). The German and British results actually show a significantly negative relationship between giving priority to material goals and life satisfaction, whereas in Australia (where the question relating to material goals was ambiguous), there appears to be essentially no relationship.

Somewhat speculatively, we also included measures of partner's life goals/values in the equations underlying these tables. In Germany, where goals/values were more carefully measured, the signs of the coefficients for partners were the same as those for a person's own goals. Men and women whose partners gave priority to family goals/values rated significantly higher than average on life satisfaction (net of the effects of their own goals), as did men whose partners gave priority to pro-social

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goals/values. Also men whose partners gave a high priority to material goals had significantly lower life satisfaction.

In Britain and Australia, where goals were less well measured, results are less clear. Indeed, in the British data, there are no significant relationships between partner goals and a person's own life satisfaction, once the effects of his/her own goals have been taken into account. In Australia there are small but statistically significant (p<0.05) links for both men and women between having a partner with pro-social goals and greater life satisfaction. For women it also appears to be important to have a partner who gives high priority to family values.

Actual and preferred working hours, social participation and healthy lifestyle
Next, we consider three choices which, in terms of causal ordering, may be regarded as consequences of both personality traits and life goals. First, the trade-off (perhaps constrained by job availability) between work and leisure. Recall that, in the Australian and German datasets, we classify individuals whose actual working time per week is within three hours of their preferred time as having their preferences met. We treat those who work over three hours more than they want as 'overworked', and those who work over three hours less than they want as 'underworked'. (In the case of British employees, we only know whether they would prefer more hours, fewer hours, or the same as they are currently working). Two other groups are also included in the analyses: unemployed people and people not currently in the labour force.

A second choice whose consequences are shown in Table 4 is the choice to be more or less active in social interactions with friends, neighbours and relatives. A further choice is to be active in sport and/or in taking regular exercise.

INSERT TABLE 4 FOR EACH COUNTRY HERE

The evidence in Table 4 indicates that most people who work more or fewer hours than they want are significantly less satisfied with life than those who come close to making their preferred trade-off between work and leisure. That said, there are some interesting national differences. For Germans being 'underworked' is worse than being 'overworked', but for Australians and Britons being overworked has a more

depressing effect on life satisfaction. German women apparently do not mind being overworked (or, to be exact, for them the relationship between overwork and life satisfaction is not statistically significant), whereas British women do not mind being underworked. Being involuntarily unemployed has much the strongest negative effect.

For all three countries, it is also clear from Table 4 that both the choice to engage in a range of social activities in one's leisure time, and the choice to exercise relatively frequently, can have substantial effects on life satisfaction. The first of these results can be regarded as confirming previous research by Bradburn (1969) and more generally Putnam (2000), while the second confirms repeated findings in the public health literature. The somewhat new contribution here is to show that both results hold net of personality traits.

A second measure of 'healthy lifestyle', BMI, can be added to the equations in Table 4, but just for recent years.[9] In all three countries obese women have significantly lower life satisfaction than average, whereas obese men are close to the male average.[10]

A final piece of analysis is more precisely focused on the issue of whether *changes* in life choices produce *changes* in life satisfaction. Table 5 gives results of fixed effects equations, rather than the random effects equations shown in previous tables. In the fixed effects model only *within-person changes over time* are analysed. An advantage of this model, which can only be used when a reasonably long series of repeated measures is available, is that all variables which, from a within-person point of view, are time invariant are 'controlled'.[11] So in Table 5 we can think of *all* genetic factors which affect happiness as being controlled, not just personality traits.

INSERT TABLE 5 FOR EACH COUNTRY HERE

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[9] Consequently an annual measure of life satisfaction, rather than a 5-year or 3-year average measure, serves as the dependent variable.

[10] In Australia the metric regression coefficient for obese women is -0.08 ($p<0.01$), in Britain b=-0.21 ($p<0.001$) and in Germany b=-0.21 ($p<0.01$).

[11] In previous tables, dealing with personality traits and life goals, assumptions required for a fixed effects model were not met. Personality traits have only been measured once in SOEP, and life goals on only a few occasions and at uneven intervals.

This final set of results indicates that, for most people in all three countries, changes over time in levels of social participation and exercise, and in the fit between actual and preferred working hours, co-vary with changes in life satisfaction.[12] In other words, choices about these three matters have statistically significant effects on life satisfaction, net of the effects of all genetic and other time invariant factors. It is recognized that the R^2 statistics (variance explained) in these tables might appear quite low, but this is normal for fixed effects equations in which only within-person variance (and not between-person variance) is accounted for. Issues to do with the substantive and theory-related importance of these results are taken up in the next section.

DISCUSSION

Happiness theory: moving towards a theory of long term stability and change
On the basis of data from all three panels, it seems almost indisputable that a substantial minority of people record long term, more or less permanent changes in their levels of life satisfaction. So one key challenge for researchers is to try and build a theory which accounts for medium and long term change, as well as stability. Plainly set-point theory, as currently understood, only accounts for stability.

It has been found that choices relating to partnering, life goals/values, hours of work (and, by implication, leisure), social and community participation and health make a substantial difference. It appears that giving relatively high priority to life domains in which it is usual to pursue non zero sum goals is a better recipe for happiness than giving priority to domains in which goal pursuit involves gains for some at the expense of losses for others. Non zero sum domains (broadly speaking) include partnering and family life, social and community participation, and health. Zero sum goals (again broadly speaking) include those relating to career advancement, enhanced status and material gains.

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[12] The same exceptions apply as in Table 3: German women appear not to mind being overworked and British women do not mind being underworked. Also, in the case of British men, there is no significant link between changes in social participation and changes in life satisfaction (although the coefficient is positive).

Attributing behaviour to individual 'choice' is often regarded as dubious in the social sciences (with the clear exception of economics). Plainly, many behaviours are subject to constraints, both economic and social. But choices relating to partner personality traits, life goals/values, social participation and healthy lifestyle appear not to be tightly constrained. An apparent but by no means watertight inference is that some (perhaps many) people could change their life choices with beneficial consequences for their happiness. This inference is not watertight because much of the evidence in this paper has related to between-person differences, not within-person changes over time. There are many notorious examples, especially in health research, of benefits inferred from between-person research not translating into significant within-person gains (Ebrahim and Smith, 1997). So it will be important in future research on happiness to obtain further longitudinal evidence, perhaps of an experimental or quasi-experimental kind (since we may have to wait a long time for panel data), on the effects of changes in choices on subsequent happiness. The key task, however, is theory development; new theoretical insights are essential to guide data collection and analysis. We are far from having a behavioural theory of happiness; a theory which accounts for change as well as stability in happiness levels.

Integrating results: choice of partner, life goals, working hours, leisure activities and healthy lifestyle

The results in this paper show that five sets of choices make a substantial difference to life satisfaction. Key preferences and choices relate to one's partner, life goals/values, the trade-off between work and leisure, social participation and healthy lifestyle. Results for the three countries replicate quite closely, despite the fact that there were some differences in question wording and response scales for both the dependent variable (life satisfaction) and all explanatory variables measuring preferences and choices.

One way to assess the 'importance' of these life goals and behavioural choices to life satisfaction is to compare their effects with the effects of variables which previous researchers have routinely reported as 'important'. Two such variables are 'being married' and extroversion, both of which are positively related to life satisfaction. It

is clear that partner's level of neuroticism, and one's own commitment to family and pro-social goals, participation in social activities and regular exercise, are as important or more important to an individual's happiness than being extroverted. [13] For women, being obese appears to more dissatisfying than not having a partner. Being underworked or overworked is, however, less serious!

These results have substantial implications for happiness theory. In order to understand the implications more clearly, it helps to understand how the choices are linked. First, as several researchers have noted, the life satisfaction levels of partners/married people are strongly positively correlated (Winkelmann, 2004; Schimmack and Lucas, 2010). It is not completely obvious that the reason for this positive relationship is that happy people make each other happier, while miserable people make each other more miserable. An alternative explanation lies in the well established finding that people with similar personality traits tend to partner/marry each other. So it is on average true that people with personalities favourable to happiness (low N, high E etc) tend to partner, as do people with personalities harmful to happiness. Such results in themselves could partly explain the positive correlations between the life satisfaction levels of partners. However, in this paper it has been shown (Table 2 for each country) that something more is involved, and that partners do promote or damage each other's longer term life satisfaction. That is, the personality of one's partner contributes to life satisfaction over and above the effects of one's own personality. As reported earlier, this result is unaffected by the degree of similarity or difference between the traits of partners.

These findings about partners suggest that happiness researchers should probably go back to Lucas et al's (2003) original view that, after getting married, some individuals record long term gains in happiness, while others show long term losses. The later view of the same authors, namely that marriage is just one of many life events that only produces a temporary (in this case upward) fluctuation in life satisfaction, seems incorrect (Clark, Diener and Lucas, 2008). The long term happiness of individuals who partner/marry a person with a similar personality to themselves is unlikely to

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[13] These benchmark assessments are made on the basis of re-running analyses with standardized variables and coefficients (Betas). That is, variables were rescaled to have means of zero and standard deviations of one. Rough comparisons can then be made between the effect sizes of regression coefficients, because they have all had the same metric imposed.

change, but those who marry someone with a more 'favourable' personality record gains, while those who partner someone with an unfavourable personality show losses. These outcomes are in line with Gottman's celebrated longitudinal and case study research on marital satisfaction documented in *The Marriage Clinic* (1997). They are also, but misleadingly, compatible with finding that the *average* effect of the life event of 'getting married' is zero.

The results in this paper relating to the impact of partner's life goals/values on happiness build on previous results suggesting that an individual's own life goals/values matter (Emmons, 1986; Headey, 2008b). It clearly runs counter to set-point theory to find that the extent to which both self and partner attach priority to pro-social goals/values affects happiness. A proponent of set-point theory might perhaps speculate that the goals one espouses are partly genetically determined. But it stretches belief to imagine that a partner's life goals could be strongly influenced by an individual's own genetic make-up. However, a very indirect and so presumably weak link is possible. It might be that genes, and personality traits in particular, create a predisposition to find a partner with similar traits to oneself, and that 'his' and 'her' genes both then predispose towards similar life goals. In this context it should be noted that there are moderate correlations in all three datasets between the life goals of partners. Even so, although genes might be indirectly implicated, it is sensible to remember the point that geneticists routinely make…genes are not destiny, they just create predispositions.

Putting results together, it is important to see that there are quite strong and readily interpretable associations among all the variables linked to life satisfaction. Individuals who themselves rate low on N and high on E, A and C tend to partner/marry people with similar traits, and these partners also have similar life goals. Further, ratings on both traits and goals are associated with activities which promote life satisfaction, namely greater social participation and a healthy lifestyle. In particular, trait E (and also O) is moderately associated with pro-social life goals/values and with greater participation in social activities. The link between pro-social goals and active social participation suggests that self-reported goals are more than just abstract statements (or idealized self-images) and have plausible connections to actual behaviour. In making this point, it is not assumed that all causation runs in

one direction. It is likely that repeated patterns of behaviour influence life goals, as well as vice-versa.

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TABLES

Table 1: Germany (SOEP)
Long term change in life satisfaction set-points from 1984-88 to 2004-08. Sample: German adults 25-64[a]

Change from 1984-88 (baseline) to….	Change of 25 percentiles or more %	Changes of 33.3 percentiles or more	Change of 50 percentiles or more %
1984-88 to 1989-93	23.8	12.5	4.8
1984-88 to 1994-98	31.4	22.0	9.5
1984-87 to 1999-03	37.6	25.7	11.8
1984-87 to 2004-08	37.9	25.5	12.3

a. Source: SOEP 1984-2008: a balanced sample of respondents who reported their life satisfaction every year (N=1076). Results are weighted, using a 1984-2008 longitudinal weight.

Table 2: Australia (HILDA Panel Survey)
Effects of Own Personality and Partner's Personality on Life Satisfaction: GLS
Random Effects Panel Regressions (metric coefficients, p-values based on robust
standard errors)

	All: Personality + Controls[a]	Partnered Men: As before + Partner Personality[a]	Partnered Women: As before + Partner Personality[a]
Neuroticism	-0.20 ***	-0.12 ***	-0.20 ***
Extroversion	0.12 ***	0.11 ***	0.11 ***
Openness	-0.06 ***	-0.06 *	-0.04 *
Agreeableness	0.13 ***	0.16 ***	0.12 ***
Conscientiousness	0.08 ***	0.10 ***	0.06 **
Partner Neuroticism		-0.07 **	-0.08 ***
Partner Extroversion		0.06 ***	0.03
Partner Openness		0.02	0.00
Partner Agreeableness		0.04	0.03
Partner Conscientiousness		0.05*	0.05 **
Adj. R squared	13.0%	10.9%	11.7%
N	55479	17652	18359

a. All results (coefficients) are net of gender, age, age squared, age cubed, partner status (1-0), unemployed (1-0), health disability (1-0), NESB (1-0), the national unemployment rate and a count variable measuring the number of years respondents had already participated in the survey.

*** significant at 0.001 **significant at 0.01 *significant at 0.05

Table 2: Britain (BHPS)

Effects of Own Personality and Partner's Personality on Life Satisfaction: GLS Random Effects Panel Regressions (metric coefficients, p-values based on robust standard errors)

	All: Personality + Controls[a]	Partnered Men: As before + Partner Personality[a]	Partnered Women: As before + Partner Personality[a]
Neuroticism	-0.40***	-0.34***	-0.36***
Extroversion	0.08***	0.07***	0.04
Openness	-0.01	0.02	-0.04
Agreeableness	0.13***	0.13***	0.17***
Conscientiousness	0.20***	0.24***	0.14***
Partner Neuroticism		-0.10***	-0.11***
Partner Extroversion		0.01	-0.01
Partner Openness		0.01	0.02
Partner Agreeableness		0.02	0.06*
Partner Conscientiousness		0.01	0.06*
Adj. R squared	20.3%	19.2%	17.0%
N	73971	24141	25315

b. All results (coefficients) are net of gender, age, age squared, age cubed, partner status (1-0), unemployed (1-0), health disability (1-0), non-white (1-0), the national unemployment rate and a count variable measuring the number of years respondents had already participated in the survey.

*** significant at 0.001 **significant at 0.01 *significant at 0.05

Table 2: Germany (SOEP)
Effects of Own Personality and Partner's Personality on Life Satisfaction: GLS
Random Effects Panel Regressions (metric coefficients, p-values based on robust
standard errors)

	All: Personality + Controls[a]	Partnered Men: As before + Partner Personality[a]	Partnered Women: As before + Partner Personality[a]
Neuroticism	-0.27 ***	-0.25 ***	-0.21 ***
Extroversion	0.07 ***	0.06 ***	0.07***
Openness	0.07 ***	0.05**	0.05
Agreeableness	0.07 ***	0.07***	0.07**
Conscientiousness	0.06 ***	0.06**	0.04
Partner Neuroticism		-0.06 ***	-0.06**
Partner Extroversion		-0.00	-0.02
Partner Openness		0.04 *	0.03
Partner Agreeableness		-0.00	-0.01
Partner Conscientiousness		0.02	0.01
Adj. R squared	20.9%	21.6%	19.2%
N	157771	59230	62712

c. All results (coefficients) are net of gender, age, age squared, age cubed, partner status (1-0), unemployed (1-0), health disability (1-0), East German (1-0), foreign (1-0), the national unemployment rate and a count variable measuring the number of years respondents had already participated in the survey.

*** significant at 0.001 **significant at 0.01 *significant at 0.05

Table 3: Australia

Effects of Own Life Goals and Partner's Life Goals on Life Satisfaction: GLS Random Effects Panel Regressions (metric coefficients, p-values based on robust standard errors)

	All: Personality + Life Goals + Controls[a]	Partnered Men: As before + Partner Life Goals[a]	Partnered Women: As before + Partner Life Goals[a]
Neuroticism	-0.21 ***	-0.13 ***	-0.21 ***
Extroversion	0.11 ***	0.09 ***	0.10 ***
Openness	-0.06 ***	-0.06 *	-0.04
Agreeableness	0.08 ***	0.12 ***	0.10 **
Conscientiousness	0.08 ***	0.08 ***	0.05 *
Partner Neuroticism		-0.06 *	-0.09 ***
Partner Extroversion		0.06 *	0.01
Partner Openness		0.04	-0.01
Partner Agreeableness		0.04	0.00
Partner Conscientiousness		0.04	0.05 *
Social/Altruistic Goals	0.07 ***	0.07 ***	0.05 ***
Family Goals	0.06 ***	0.09 ***	0.07 *
Material Goals	0.01	0.04 *	0.02
Partner Social/Altruistic Goals		**0.02 ***	**0.02 ***
Partner Family Goals		**-0.03**	**0.06 ****
Partner Material Goals		**-0.01**	**-0.01**
R squared[b]	14.7%	12.8%	13.2%
N	51758	14979	15786

a. All results (coefficients) are net of gender, age, age squared, age cubed, partner status (1-0), unemployed (1-0), health disability (1-0), NESB (1-0), the national unemployment rate and a count variable measuring the number of years respondents had already participated in the survey.

b. The R^2 reported here is a weighted average of variance accounted for 'between persons' and 'within persons'.

*** significant at 0.001 **significant at 0.01 *significant at 0.05

Table 3: Britain (BHPS)

Effects of Own Life Goals and Partner's Life Goals on Life Satisfaction: GLS Random Effects Panel Regressions (metric coefficients, p-values based on robust standard errors)

	All: Personality + Life Goals + Controls[a]	Partnered Men: As before + Partner Life Goals[a]	Partnered Women: As before + Partner Life Goals[a]
Neuroticism	-0.40**	-0.34***	-0.37***
Extroversion	0.05**	0.07*	0.01
Openness	-0.05**	-0.00	-0.08*
Agreeableness	0.09***	0.09*	0.08*
Conscientiousness	0.19***	0.20***	0.14***
Partner Neuroticism		-0.11***	-0.08***
Partner Extroversion		-0.04	-0.03
Partner Openness		0.03	0.04
Partner Agreeableness		-0.01	0.07*
Partner Conscientiousness		-0.02	0.06
Social/Altruistic Goals	0.11***	0.10***	0.13***
Family Goals	0.10***	0.12*	0.22***
Material Goals	-0.04***	-0.04	-0.05*
Partner Social/Altruistic Goals		0.03	0.03
Partner Family Goals		-0.00	-0.02
Partner Material Goals		-0.01	-0.01
R squared[b]	20.8%	20.6%	20.8%
N	39406	5839	6100

c. All results (coefficients) are net of gender, age, age squared, age cubed, partner status (1-0), unemployed (1-0), health disability (1-0), non-white (1-0), the national unemployment rate and a count variable measuring the number of years respondents had already participated in the survey.

d. The R^2 reported here is a weighted average of variance accounted for 'between persons' and 'within persons'.

*** significant at 0.001 **significant at 0.01 *significant at 0.05

Table 3: Germany (SOEP

Effects of Own Life Goals and Partner's Life Goals on Life Satisfaction: GLS Random Effects Panel Regressions(metric coefficients, p-values based on robust standard errors)

	All: Personality + Life Goals + Controls[a]	Partnered Men: As before + Partner Life Goals[a]	Partnered Women: As before + Partner Life Goals[a]
Neuroticism	-0.28 ***	-0.25 ***	-0.21 ***
Extroversion	0.06 ***	0.06 ***	0.07 **
Openness	0.06 ***	0.03	0.03
Agreeableness	0.04 ***	0.05**	0.05
Conscientiousness	0.06 ***	0.06**	0.05
Partner Neuroticism		-0.07 ***	-0.05 *
Partner Extroversion		-0.02	-0.02
Partner Openness		0.04*	0.03
Partner Agreeableness		-0.02	-0.02
Partner Conscientiousness		0.02	0.02
Social/Altruistic Goals	0.27 ***	0.19 ***	0.21 ***
Family Goals	0.21 ***	0.15 ***	0.14 **
Material Goals	-0.10 ***	0.03	-0.06
Partner Social/Altruistic Goals		0.14**	0.09
Partner Family Goals		0.15***	0.17 **
Partner Material Goals		-0.17***	-0.09
R squared[b]	22.4%	23.7%	21.0%
N	154710	57858	61427

e. All results (coefficients) are net of gender, age, age squared, age cubed, partner status (1-0), unemployed (1-0), health disability (1-0), East German (1-0), foreign (1-0), the national unemployment rate and a count variable measuring the number of years respondents had already participated in the survey.

f. The R^2 reported here is a weighted average of variance accounted for 'between persons' and 'within persons'.

*** significant at 0.001 **significant at 0.01 *significant at 0.05

Table 4: Australia (HILDA)
Effects of Working Hours, Social Participation and Healthy Lifestyle on Life
Satisfaction: GLS Random Effects Panel Regressions (metric coefficients, p-values
based on robust standard errors)

	All Respondents: Own Personality + Life Goals + Work Hours + Social Participation + Healthy Lifestyle[a]	Men: Own Personality + Life Goals + Work Hours + Social Participation + Healthy Lifestyle[a]	Women: Own Personality + Life Goals + Work Hours + Social Participation + Healthy Lifestyle[a]
Neuroticism	-0.18 ***	-0.14 ***	-0.21 ***
Extroversion	0.10 ***	0.11 ***	0.08 ***
Openness	-0.07 ***	-0.07 ***	-0.06 **
Agreeableness	0.09 ***	0.11 ***	0.06 *
Conscientiousness	0.07 ***	0.08 ***	0.06 **
Social/Altruistic Goals	0.07 ***	0.06 ***	0.07 ***
Family Goals	0.06 ***	0.06 **	0.05 *
Material Goals	0.01	0.02	-0.01 ***
Employed but underworked[b]	-0.12 ***	-0.15 ***	-0.11 ***
Employed and overworked[b]	-0.18 ***	-0.18 **	-0.17 ***
Unemployed[b]	-0.42 ***	-0.39 ***	-0.44 ***
Not in labor force[b]	0.06	0.00	0.12
Social Participation	0.06 ***	0.05 ***	0.07 ***
Exercise: Frequency	0.04 ***	0.03 ***	0.05 ***
R-squared[d]	15.7%	15.8%	15.9%
N	36191	18565	17626

a. All results (coefficients) are net of gender, age, age squared, age cubed, partner status (1-0), unemployed (1-0), health disability (1-0), NESB (1-0), the national unemployment rate and a count variable measuring the number of years respondents had already participated in the survey.
b. The R^2 reported here is a weighted average of variance accounted for 'between persons' and 'within persons'.

*** significant at 0.001 **significant at 0.01 *significant at 0.05

Table 4: Britain (BHPS)
Effects of Working Hours, Social Participation and Healthy Lifestyle on Life Satisfaction: GLS Random Effects Panel Regressions (metric coefficients, p-values based on robust standard errors)

	All Respondents: Own Personality + Life Goals + Work Hours + Social Participation + Healthy Lifestyle[a]	Men: Own Personality + Life Goals + Work Hours + Social Participation + Healthy Lifestyle[a]	Women: Own Personality + Life Goals + Work Hours + Social Participation + Healthy Lifestyle[a]
Neuroticism	-0.37***	-0.35***	-0.38***
Extroversion	0.03	0.04	0.02
Openness	-0.06***	-0.07**	-0.05
Agreeableness	0.12***	0.11***	0.13***
Conscientiousness	0.16***	0.19***	0.12***
Social/Altruistic Goals	0.12***	0.12***	0.12***
Family Goals	0.08***	0.04*	0.11***
Material Goals	-0.04***	-0.03	-0.05**
Employed but underworked[b]	-0.05	-0.14***	0.02
Employed and overworked[b]	-0.08***	-0.07***	-0.09***
Unemployed[b]	-0.02	-0.10	-0.18
Not in labor force[b]	0.06	0.09	0.06
Social Participation	0.05***	0.06***	0.04*
Exercise: Frequency	0.04***	0.05***	0.03*
R-squared[d]	18.7%	19.7%	18.5%
N	23901	11400	12501

c. All results (coefficients) are net of gender, age, age squared, age cubed, partner status (1-0), unemployed (1-0), health disability (1-0), non-white (1-0), the national unemployment rate and a count variable measuring the number of years respondents had already participated in the survey.

d. The R^2 reported here is a weighted average of variance accounted for 'between persons' and 'within persons'.

*** significant at 0.001 **significant at 0.01 *significant at 0.05

Table 4: Germany (SOEP)
Effects of Working Hours, Social Participation and Healthy Lifestyle on Life Satisfaction: GLS Random Effects Panel Regressions (metric coefficients, p-values based on robust standard errors)

	All Respondents: Own Personality + Life Goals + Work Hours + Social Participation + Healthy Lifestyle[a]	Men: Own Personality + Life Goals + Work Hours + Social Participation + Healthy Lifestyle[a]	Women: Own Personality + Life Goals + Work Hours + Social Participation + Healthy Lifestyle[a]
Neuroticism	-0.27***	-0.27 ***	-0.26 ***
Extroversion	0.05 ***	0.05 ***	0.06 ***
Openness	0.05 ***	0.05 ***	0.05 ***
Agreeableness	0.04 **	0.05 ***	0.04*
Conscientiousness	0.06 ***	0.06 ***	0.04 *
Social/Altruistic Goals	0.24 ***	0.23 ***	0.25 ***
Family Goals	0.21 ***	0.19 ***	0.23 ***
Material Goals	-0.10 ***	-0.05	-0.14 ***
Employed but underworked[b]	-0.05 ***	-0.04 ***	-0.07 ***
Employed and overworked[b]	-0.02 **	-0.02 **	0.01
Unemployed[b]	-0.31 ***	-0.36 ***	-0.27 ***
Not in labor force[b]	-0.02	-0.14 ***	0.02
Social Participation	0.09 ***	0.09 ***	0.09 ***
Exercise: Frequency	0.03 ***	0.02 ***	0.03 ***
R-squared[d]	22.1%	23.2%	21.0%
N	123044	64177	58867

e. All results (coefficients) are net of gender, age, age squared, age cubed, partner status (1-0), unemployed (1-0), health disability (1-0), East German (1-0), foreign (1-0), the national unemployment rate and a count variable measuring the number of years respondents had already participated in the survey.

f. The R^2 reported here is a weighted average of variance accounted for 'between persons' and 'within persons'.

*** significant at 0.001 **significant at 0.01 *significant at 0.05

Table 5: Australia (HILDA)
Changes in Working Hours, Social Participation and Healthy Lifestyle affect *Changes* in Life Satisfaction: Fixed Effects Panel Regressions (metric coefficients, p-values based on robust standard errors)

	All Respondents[a]	Men[a]	Women[a]
Employed but underworked[b]	-0.11***	-0.11***	-0.01***
Employed and overworked[b]	-0.15 ***	-0.14 ***	-0.15***
Unemployed[b]	-0.40***	-0.29***	-0.51***
Not in labor force[b]	0.06	-0.09	0.22
Social Participation	0.05***	0.05***	0.05***
Exercise: Frequency	0.02***	0.02***	0.04***
R-squared	7.3%	8.0%	6.0%
N	45697	23857	21787

a. All results (coefficients) are net of age, age squared, age cubed, partner status (1-0), unemployed (1-0), health disability (1-0), NESB (1-0) and the national unemployment rate. The R^2 reported here is a weighted average of variance accounted for 'between persons' and 'within persons'.

*** significant at 0.001 **significant at 0.01 *significant at 0.05

Table 5: Britain (BHPS)
Changes in Working Hours, Social Participation and Healthy Lifestyle affect *Changes*
in Life Satisfaction: Fixed Effects Panel Regressions (metric coefficients, p-values
based on robust standard errors)

	All Respondents[a]	Men[a]	Women[a]
Employed but underworked[b]	-0.05*	-0.12***	-0.00
Employed and overworked[b]	-0.07***	-0.05***	-0.08***
Unemployed[b]	-0.06	0.03	-0.14
Not in labor force[b]	0.05	0.04	0.06
Social Participation	0.04***	0.02	0.06***
Exercise: Frequency	0.03***	0.04***	0.03*
R-squared	3.4%	1.5%	2.0%
N	42315	20085	22230

b. All results (coefficients) are net of age, age squared, age cubed, partner status (1-0),
unemployed (1-0), health disability (1-0), non-white (1-0) and the national unemployment
rate. The R^2 reported here is a weighted average of variance accounted for 'between persons'
and 'within persons'.

*** significant at 0.001 **significant at 0.01 *significant at 0.05

Table 5: Germany (SOEP)

Changes in Working Hours, Social Participation and Healthy Lifestyle affect *Changes* in Life Satisfaction: Fixed Effects Panel Regressions (metric coefficients, p-values based on robust standard errors)

	All Respondents[a]	Men[a]	Women[a]
Employed but underworked[b]	-0.08***	-0.07***	-0.07***
Employed and overworked[b]	-0.02*	-0.02**	-0.01
Unemployed[b]	-0.32***	-0.44***	-0.23***
Not in labor force[b]	-0.10***	-0.24***	-0.03
Social Participation	0.06***	0.07***	0.06***
Exercise: Frequency	0.02***	0.03***	0.02***
R-squared	5.3%	7.6%	4.3%
N	142390	69842	72548

c. All results (coefficients) are net of age, age squared, age cubed, partner status (1-0), unemployed (1-0), health disability (1-0), East German (1-0), foreign (1-0) and the national unemployment rate. The R^2 reported here is a weighted average of variance accounted for 'between persons' and 'within persons'.

*** significant at 0.001 **significant at 0.01 *significant at 0.05